Complete Summary

GUIDELINE TITLE

Pretreatment staging of invasive transitional cell carcinoma of the bladder.

BIBLIOGRAPHIC SOURCE(S)

Jafri SZ, Shetty M, Choyke PL, Bluth EI, Bush WH Jr, Casalino DD, Francis IR, Kawashima A, Papanicolaou N, Rosenfield AT, Sandler CM, Segal AJ, Tempany C, Resnick MI, Expert Panel on Urologic Imaging. Pretreatment staging of invasive transitional cell carcinoma of the bladder. [online publication]. Reston (VA): American College of Radiology (ACR); 2005. 8 p. [51 references]

GUIDELINE STATUS

This is the current release of the guideline.

It updates a previous published version: American College of Radiology, Expert Panel on Urologic Imaging. Pretreatment staging of invasive transitional cell carcinoma of the bladder. Reston (VA): American College of Radiology (ACR); 2001. 6 p. (ACR appropriateness criteria). [39 references]

The appropriateness criteria are reviewed annually and updated by the panels as needed, depending on introduction of new and highly significant scientific evidence.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Invasive transitional cell carcinoma of the bladder (TCCB)

GUIDELINE CATEGORY

Diagnosis
Evaluation
Screening

CLINICAL SPECIALTY

Family Practice
Internal Medicine
Oncology
Radiation Oncology
Radiology
Urology

INTENDED USERS

Health Plans
Hospitals
Managed Care Organizations
Physicians
Utilization Management

GUIDELINE OBJECTIVE(S)

To evaluate the appropriateness of radiologic examinations for pretreatment staging of invasive transitional cell carcinoma of the bladder (TCCB)

TARGET POPULATION

Patients with invasive transitional cell carcinoma of the bladder (TCCB)

INTERVENTIONS AND PRACTICES CONSIDERED

1. X-ray
    - Chest
    - Kidney, intravenous pyelogram (IVP)
    - Bone, metastatic survey
2. Magnetic resonance imaging (MRI)
    - Pelvis
    - Abdomen
3. Computed tomography (CT)
    - Urography, pre- and post-contrast with excretory phase
    - Chest
4. Positron emission tomography (PET)
5. Nuclear medicine (NUC), bone scan
6. Ultrasound (US)
    - Bladder, transabdominal
    - Bladder, transrectal

Note: Only invasive tumors will be considered. The imaging work-up begins after the tumor has been identified cystoscopically and has been proven by biopsy.

MAJOR OUTCOMES CONSIDERED

Utility of radiologic examinations in differential diagnosis

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The guideline developer performed literature searches of peer-reviewed medical journals, and the major applicable articles were identified and collected.

NUMBER OF SOURCE DOCUMENTS

The total number of source documents identified as the result of the literature search is not known.

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Not Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not stated

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

One or two topic leaders within a panel assume the responsibility of developing an evidence table for each clinical condition, based on analysis of the current literature. These tables serve as a basis for developing a narrative specific to each clinical condition.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus (Delphi)

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Since data available from existing scientific studies are usually insufficient for meta-analysis, broad-based consensus techniques are needed for reaching agreement in the formulation of the appropriateness criteria. The American College of Radiology (ACR) Appropriateness Criteria panels use a modified Delphi technique to arrive at consensus. Serial surveys are conducted by distributing questionnaires to consolidate expert opinions within each panel. These questionnaires are distributed to the participants along with the evidence table and narrative as developed by the topic leader(s). Questionnaires are completed by participants in their own professional setting without influence of the other members. Voting is conducted using a scoring system from 1-9, indicating the least to the most appropriate imaging examination or therapeutic procedure. The survey results are collected, tabulated in anonymous fashion, and redistributed after each round. A maximum of three rounds is conducted and opinions are unified to the highest degree possible. Eighty percent agreement is considered a consensus. This modified Delphi technique enables individual, unbiased expression, is economical, easy to understand, and relatively simple to conduct.

If consensus cannot be reached by the Delphi technique, the panel is convened and group consensus techniques are utilized. The strengths and weaknesses of each test or procedure are discussed and consensus reached whenever possible. If "No consensus" appears in the rating column, reasons for this decision are added to the comment sections.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Criteria developed by the Expert Panels are reviewed by the American College of Radiology (ACR) Committee on Appropriateness Criteria.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

ACR Appropriateness Criteria®

Clinical Condition: Pretreatment Staging of Invasive Bladder Cancer

Radiologic Exam Procedure	Appropriateness Rating	Comments
X-ray, chest	9	Effective screen of site of most common hematogenous metastasis.
X-ray, kidney, intravenous urography, IVP	8	
MRI, pelvis	8	
CT, urography, pre- and post-contrast with excretory phase	8	
PET	4	
CT, chest	3	Probably not indicated unless chest radiograph is suspicious.
NUC, bone scan	3	Probably not indicated unless bone pain is present.
US, bladder, transabdominal	3	Limited visualization beyond the bladder wall.
MRI, abdomen	3	Probably not indicated unless CT is inconclusive.
US, bladder, transrectal	2	
X-ray, bone, metastatic survey	1	
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9 1 = Least appropriate 9 = Most appropriate		

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

In 2005, it is estimated that over 63,000 new cases of bladder cancer will be diagnosed in the U.S. and over 13,000 will die of the disease. The lifetime probability of developing invasive bladder cancer is 1 in 28 for men and 1 in 88 for women in the U.S. Bladder cancer has a high tendency toward multifocality at presentation and recurrence after treatment. Transitional cell carcinoma of the bladder (TCCB) is the most common cell type, accounting for greater than 90% of all cases of bladder cancer. The average age of patients with TCCB in the United States is 65 years at diagnosis. Almost 80% of patients with TCCB present with hematuria, which is either gross or microscopic and is usually painless and intermittent. TCCB spreads by local extension through the basement membrane into the muscular layer, then to the perivesical fat. Progressive extension into the muscular layer allows vascular and lymphatic invasion and more distant spread. The most common sites of hematogenous spread are lung, bone, liver, and brain. Superficial lesions do not metastasize until they invade deeply and may remain indolent for many years. 70%-85% of TCCB is superficial at presentation, confined to the mucosa or submucosa, without muscle invasion. Only invasive tumors will be considered here. The imaging workup begins after the bladder tumor has been identified cystoscopically and has been proven by biopsy.

TCCB is staged by its extension at presentation and graded I-IV according to microscopic criteria of aggressiveness. The standard staging systems for bladder cancer (see Table 1 in the original guideline document) are the Jewett Strong Marshall (JSM) classification and the Tumor Node Metastasis (TNM) systems. In the classic JSM staging system, A is divided from B by the lamina propria, B is divided into superficial versus deep infiltration of the muscularis, B is divided from C by the serosa of the bladder, and D is characterized by involvement of regional then distant nodes or other organ involvement. The division of Stage B into superficial and deep is based on Jewett's observation of an 80% 5-year survival rate of patients with B1 lesions compared with 8% for patients with B2 lesions in a small series. The TNM system encompasses the status of the primary tumor (T), the lymph nodes (N), and any metastasis (M).

Tumor grade relates directly to depth of invasion but inversely to curability, so that the 5-year survival rate of patients with grade III and IV superficial tumors is only half that of patients with low-grade I and II superficial tumors (37% versus 71%). Patients with invasive tumors with no nodal involvement have a 5-year survival of 28%, and those with nodal involvement have a 5-year survival of 11%.

Treatment ranges from cystoscopic local excision or segmental bladder resection with pelvic lymphadenectomy for early tumors to irradiation, chemotherapy, and/or radical extirpation for deep invasion. Radical cystectomy with pelvic lymphadenectomy remains the standard treatment for muscle invasive urothelial tumors of the bladder.

Since clinical staging by cystoscopy and bimanual examination under anesthesia is inaccurate in more than 50% of patients, imaging is vital to the proper treatment of these patients. The principal task is to identify extravesical spread. Unfortunately, none of the imaging modalities can identify microscopic spread to muscle layer, perivesical fat, lymph nodes, or other organs.

Cystography, pelvic angiography, lymphangiography (LAG) with or without percutaneous fine-needle aspiration (FNA) biopsy, and plain-film whole-lung laminography are no longer routinely used in staging TCCB since the advent of cross-sectional imaging.

Plain-Film Skeletal Survey

Because plain-film skeletal survey sensitivity is so low, in the range of 17%-60%, it is also no longer used. Plain-film exam is only useful at a site of increased activity on radionuclide bone scan or local bone pain.

Excretory Urography

Excretory urography (EU) remains the best screen for upper tract disease and the most sensitive in detecting small urothelial lesions. With the recent introduction of CT urography, the role of excretory urography in evaluating the renal collecting system and ureter has been challenged. Although only 60% of known bladder tumors are visualized by IVP, obstruction of a ureteral orifice at the level of the ureterovesical junction, if stone is excluded, is usually due to invasive bladder tumor. Any degree of ureteric obstruction is significantly associated with both decreased overall survival and decreased tumor-free interval.

One study found synchronous transitional cell carcinoma (TCC) above the bladder in 14 of 597 (2.3%) patients with TCCB, 8 (1.3%) with urethral TCC and 6 (1.0%) with renal TCC. They reported a range of incidence of synchronous upper-tract lesions between 0% and 6.4% and stated that IVP "must be performed" when TCCB is first diagnosed. Retrograde ureteropyelography is also excellent for detailed study of the urothelium, especially when EU is contraindicated or the results are equivocal. However, recent studies have reported an incidence of 1.1% in which EU was able to diagnose only 66% of cases.

Chest Radiograph and Computed Tomography

All patients with invasive TCCB need pulmonary evaluation. The chest radiograph is an effective, inexpensive, low-morbidity screen. Patients with equivocal chest radiograph and those thought to be at high risk should have chest CT.

Radionuclide Bone Scan

Radionuclide skeletal scintigraphy has a sensitivity ranging from 69%-100% but is highly nonspecific. Solitary bone lesions in patients with underlying primary malignancies are due to metastases in only 55% of cases. The incidence of bone metastases in bladder cancer patients increases with tumor stage at time of diagnosis, from 5% of patients with early-stage invasive tumors to 15% of patients with locally advanced disease. A 4.6% positive rate was found in 458 bone scan studies. Since therapy was affected in only 0.9%, the conclusion was that scintigraphy has "no place in the routine preoperative staging of bladder carcinoma." Bone scanning may be limited to patients with bone pain and/or elevated levels of serum alkaline phosphatase. Further evaluation with plain films and/or MRI can be helpful, and, if necessary, guided needle biopsy can be definitive.

Radionuclide Liver Scan

Although approximately 30% of patients dying of bladder cancer have liver metastases at autopsy, liver metastases at initial presentation are rare. Liver scans in one study of 112 bladder cancer patients failed to identify a single lesion correctly. Since abdominal CT has now replaced radionuclide evaluation of the liver, abdominal CT could be reserved for patients with abnormal liver function tests, hepatomegaly, or jaundice. Guided-needle biopsy can provide histologic material from any lesion found.

Ultrasound: Transabdominal, Transrectal, and Transurethral

The distended bladder is a superb acoustic window. Size and location of the tumor affect detectability with US. Lesions smaller than 0.5 cm that are flat and/or near the bladder neck can be easily missed. Nevertheless, detection rates of over 95% are reported. US is limited in visualization beyond the bladder wall and cannot detect nodal enlargement. Also it cannot differentiate wall edema, prominent mural folds, postoperative changes, blood clots, or benign masses. Color Doppler with transrectal ultrasound (TRUS) adds nothing to evaluation of stage or grade.

TRUS is excellent for evaluating prostate and seminal vesicles. Transurethral ultrasound (TUUS) is more sensitive than transabdominal ultrasound (TAUS) and TRUS and is more accurate in staging depth of wall involvement but is not widely available. TRUS provides local staging information with 62%-100% accuracy, highest for superficial tumors. TRUS staging is unreliable for tumors larger than 3 cm and tumors with calcifications, largely because of acoustic shadowing. It is poor (70%) for evaluating extravesical spread. Three-dimensional ultrasound rendering is yet another new diagnostic tool with potential to aid in discriminating superficial from muscle invasive tumors.

Endoluminal ultrasound (ELUS), also known as intravesical ultrasound (IVUS), uses a miniature, high-frequency transducer introduced by a rigid cystoscope for intravesical evaluation. However, ELUS is both sensitive and specific in detecting muscle invasion in bladder cancer, with a rate comparable to that of TUUS, and it provides greater bladder wall detail. Limitations include difficulty in depicting the tumor base in certain locations and in depicting the depth of invasion in tumors larger than 2 cm with broad bases.

With progression from TAUS to TRUS to TUUS and ELUS, the diagnostic accuracy of US has improved. In 214 new cases of TCCB with pathological correlation, one study reported overall accuracy of 78.6% in local staging with TAUS. They had 9.8% overstaging and 11.7% understaging. Their accuracy was 87% for stage A, 60.5% for stage B, 41.2% for stage C, and 83.3% for stage D. Another study reported an overall accuracy of 96.5% in diagnosing and staging bladder tumors with TUUS in 104 patients: 96.2% in stage Ta-T1 lesions, 100.0% in T2 lesions, 91.7% in T3 lesions, and 100.0% in T4 lesions. There was no discussion of N or M staging. Studies have shown ELUS to be 100% sensitive, 75% specific and 84% accurate in detecting muscle invasion in bladder cancer, with both a positive and negative predictive value of 100%. 3D rendering had a 66% staging accuracy for pTa tumors, 83% for pT1 tumors, and 100% for >pT1 or muscle invasive tumors.

Computed Tomography of the Pelvis and Abdomen

The primary contribution of conventional CT is distinguishing tumors that are organ confined from those with extravesical extension. It demonstrates bulky thickening of the bladder wall, perivesical extension, lymph node enlargement, and distant metastases very well. Identification of the primary lesion can be difficult in the areas of the bladder neck and dome. CT cannot distinguish inflammatory postoperative or postradiation edema or fibrosis from tumor and cannot assess depth of invasion of the bladder wall. CT is also unable to detect microscopic or small volume extravesical tumor extension and metastases in non-enlarged lymph nodes.

One study found an accuracy of 50% in CT staging of pT2(B1) and pT3a(B2) (p=pathologic) lesions, understaging of 29.5% of cases, and overstaging of 20.5% of cases. Staging of pT3b(C) lesions was 46.2% accurate, with 53.8% understaged. Of 16 pT4 lesions, one (6.3%) was correctly diagnosed and 15 were understaged. All had infiltration into prostate or seminal vesicle.

A second study reviewed 437 cases in the literature using CT to stage TCCB. Overall accuracy ranged from 40%-85%, with correct staging of nodes and metastases ranging from 82%-97%. For extravesical extension, accuracy ranged from 40%-92% with a mean of 74%. A third report found overall accuracy of 54.9%, with 39% understaging and 20.7% false negative for extravesical spread. Preoperative CT staging altered planned surgical management in only 3.7% of cases. Multidetector row helical CT with IV contrast and 60 second delayed images is a highly sensitive and specific method for detecting bladder cancer and associated perivesical invasion, particularly when there is a greater than 7 day time interval between intervention and CT. Its sensitivity and specificity are up to 92% and 98% in this setting, respectively.

Various methods for bladder distension have been studied to increase the accuracy of detecting muscle invasion in bladder cancer on CT imaging. These include evaluating the bladder filled with urine, urine opacified with iodinated contrast material, and air. These methods have accuracies of approximately 84%, 89% and 93% respectively, with overstaging and understaging percentages comparable, ranging from 4%-7% for overstaging and 2%-4% for understaging.

In addition to conventional CT, helical CT with multiplanar reformation (MPR), three-dimensional reconstruction (3DR), and virtual cystoscopy (CTVC) have also been described in the literature. Using helical CT and MPR, some authors found an overall accuracy of 87.7% in CT staging of all stages of bladder cancer and, more specifically, 76.9% for Ta-T2 and 94.7% for T3-T4. Pathologic lymph nodes were confirmed in six or seven cases. MPR was shown to be useful in evaluating the origin and extent of extravesical invasion, as well as tumor relationship to the ureter. The sensitivities of 3DR and CTVC images in detecting bladder carcinomas of all stages were 76.9% and 95.4%, respectively. However, while CTCV does allow interactive endoluminal navigation similar to that of traditional cystoscopy, it is less accurate in identifying tumor origin, wall thickening, and extravesical invasion than helical axial and MPR images.

Multidetector CT urography provides collecting system opacification comparable to that of excretory urography, and preliminary studies suggest that it may have a role in detecting upper tract tumors. In one series, six of six upper tract transitional cell foci were identified. Additionally, 9 of 10 bladder malignancies were successfully detected. However, a larger number of patients are needed to assess the effectiveness of this modality in detecting upper tract neoplasm.

Magnetic Resonance Imaging

MRI is superior to CT in demonstrating the lower pelvic anatomy. There is striking inherent contrast between the bright perivesical fat and the intermediate-signal-intensity bladder wall on T1-weighted images. Multiplanar imaging and gadolinium enhancement improve visualization of tumors on T1-weighted images. Fat enhancement techniques can help identify perivesical extension. Deep muscle invasion presents as disruption of the low-signal-intensity bladder wall by tumor, which usually is of higher signal intensity. After intravenous gadolinium chelates, transitional cell carcinoma of the bladder (TCCB) shows earlier and greater enhancement than normal bladder or non malignant tissue.

Most recently, one study demonstrated staging accuracies of 85% and 82% in differentiating superficial from muscle invasive tumors and organ-confined from non-organ-confined tumors, respectively. Additionally, the accuracy of pathologic lymph node detection was 96%. Overstaging occurred in 32% of cases. The length of time elapsed between transurethral resection and MRI did not affect staging accuracy. A second study reviewed 340 cases using MRI. The staging of tumor was correct in 73%-96% of cases, and the staging of nodes and metastases was 73%-98% correct. The best staging results were with gadolinium-enhanced T1-weighted fast spin-echo sequences 14 seconds after injection. They thought that after cystoscopic identification of tumor, staging should start with MRI. A third study reviewed 71 patients using gadolinium-enhanced endorectal surface coil and reported an 83% overall staging accuracy. Muscle invasion was diagnosed with 87% accuracy, 91% sensitivity and 87% specificity. MRI-based noncontrast virtual cystoscopy is up to 90.9% sensitive in detecting bladder tumors, but it provides no additional information with respect to muscle invasion compared to conventional MRI. MRI performed with ferumoxtran-10 (ultrasmall superparamagnetic iron oxide) contrast demonstrated accuracy in pathologic lymph node detection of up to 92% and a sensitivity of up to 96%.

CT versus MRI

Noting that MRI appears to have slightly better sensitivity and specificity than CT, some authors felt that its benefits were offset by its increased cost and the length of exam. They limited their use of MRI to equivocal cases. Other authors felt that use of CT and MRI may be limited to tumors larger than 5 cm and to solid rather than papillary lesions. Another study stated that MRI and CT are approximately equal in accuracy of diagnosing perivesical fat invasion and that the most notable advantage of MRI is its apparent ability to differentiate between superficial and deep invasion of the bladder wall. A fourth study concluded that MRI is the best technique for staging invasive tumors. They contended that MRI is slightly better than or equal to CT at differentiating T3a from T3b and superior to CT for tumors at the bladder dome or base. In deeply infiltrating tumors (stages T3b-T4b), they asserted that MRI "is generally agreed to be the most accurate staging technique," and "When MR imaging is available, CT is no longer needed." Recently, a review article stated that MRI is the investigation of choice for local staging and is the preferred technique in post cystectomy and radiation therapy follow-up. In another review of 143 patients prior to radiotherapy confirmed that MR is superior to clinical staging and provided additional prognostic information.

Both CT and MR imaging rely on enlargement of lymph nodes as a criterion for metastasis. Lymph node metastasis in patients with superficial tumors (less than T3) is rare, but if deep muscle layers are involved (T3a) or if extravesical invasion is seen, the incidence of lymph node metastasis rises to 20%-30% and 50%-60%, respectively. If a lymph node is considered to contain metastasis, an FNA biopsy should be considered. Both CT and MRI are considered similar in their ability to detect nodal enlargement.

PET, SPECT, and Radioimmunoscintigraphy

Conventional PET using FDG is unsuitable for imaging bladder tumors because of its high urinary excretion. However, it is 67% sensitive, 86% specific and 80% accurate in detecting pathologic lymph nodes in patients with bladder cancer, which exceeds both CT and MRI. The experimental modality of radioimmunoscintigraphy using anti-MUC1 mucin monoclonal antibody C595 labeled with various radiotracers has been shown to be up to 90% sensitive in detecting invasive cancer and 88% sensitive in detecting distant metastases, in sites such as lymph node, bone, and lung.

Recommendations

The EU and chest radiograph are necessary. However, with the introduction of CT urography, the role of EU has been challenged. Cystography, angiography, lymphangiography (LAG) with or without fine-needle aspiration (FNA) biopsy, and plain-film whole-lung laminography are not indicated. Radionuclide bone scan is not indicated without bone pain and/or elevated serum alkaline phosphatase levels. Plain-film skeletal survey is seldom productive, and plain films can be limited to sites of increased uptake and/or bone pain. The literature shows that radionuclide liver scan is not helpful without hepatomegaly, jaundice, or elevated liver function tests. Since abdominal CT has replaced this study, the same restrictions could apply. However, it is simple to combine examination of the abdomen with examination of the pelvis on CT or MRI. Chest CT can be limited to those with equivocal chest radiographs. US is useful for local tumor (T) staging; TUUS and ELUS appear to be equally effective in this regard. Contrast-enhanced MRI is preferred over CT for local staging and is equivalent in the assessment of regional lymph nodes. CT of the brain is needed only if neurological symptoms are present.

Abbreviations

- CT, computed tomography
- IVP, intravenous pyelogram
- MRI, magnetic resonance imaging
- NUC, nuclear medicine
- PET, positron emission tomography
- US, ultrasound

CLINICAL ALGORITHM(S)

Algorithms were not developed from criteria guidelines.

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The recommendations are based on analysis of the current literature and expert panel consensus.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Selection of appropriate radiologic imagine procedures for pretreatment staging of invasive transitional cell carcinoma of the bladder (TCCB)

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

An American College of Radiology (ACR) Committee on Appropriateness Criteria and its expert panels have developed criteria for determining appropriate imaging examinations for diagnosis and treatment of specified medical condition(s). These criteria are intended to guide radiologists, radiation oncologists, and referring physicians in making decisions regarding radiologic imaging and treatment. Generally, the complexity and severity of a patient's clinical condition should dictate the selection of appropriate imaging procedures or treatments. Only those exams generally used for evaluation of the patient's condition are ranked. Other imaging studies necessary to evaluate other co-existent diseases or other medical consequences of this condition are not considered in this document. The availability of equipment or personnel may influence the selection of appropriate imaging procedures or treatments. Imaging techniques classified as investigational by the U.S. Food and Drug Administration (FDA) have not been considered in developing these criteria; however, study of new equipment and applications should be encouraged. The ultimate decision regarding the appropriateness of any specific radiologic examination or treatment must be made by the referring physician and radiologist in light of all the circumstances presented in an individual examination.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Personal Digital Assistant (PDA) Downloads

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Jafri SZ, Shetty M, Choyke PL, Bluth EI, Bush WH Jr, Casalino DD, Francis IR, Kawashima A, Papanicolaou N, Rosenfield AT, Sandler CM, Segal AJ, Tempany C, Resnick MI, Expert Panel on Urologic Imaging. Pretreatment staging of invasive transitional cell carcinoma of the bladder. [online publication]. Reston (VA): American College of Radiology (ACR); 2005. 8 p. [51 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1995 (revised 2005)

GUIDELINE DEVELOPER(S)

American College of Radiology - Medical Specialty Society

SOURCE(S) OF FUNDING

The American College of Radiology (ACR) provided the funding and the resources for these ACR Appropriateness Criteria®.

GUIDELINE COMMITTEE

Committee on Appropriateness Criteria, Expert Panel on Urologic Imaging

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Panel Members: S. Zafar H. Jafri, MD (Principal Author); Monisha Shetty, MD; Peter L. Choyke, MD (Panel Chair); Edward I. Bluth, MD; William H. Bush, Jr, MD; David D. Casalino, MD; Isaac R. Francis, MD; Akira Kawashima, MD, PhD; Nicholas Papanicolaou, MD; Arthur T. Rosenfield, MD; Carl Sandler, MD; Arthur J. Segal, MD; Clare Tempany, MD; Martin I. Resnick, MD

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

It updates a previous published version: American College of Radiology, Expert Panel on Urologic Imaging. Pretreatment staging of invasive transitional cell carcinoma of the bladder. Reston (VA): American College of Radiology (ACR); 2001. 6 p. (ACR appropriateness criteria). [39 references]

The appropriateness criteria are reviewed annually and updated by the panels as needed, depending on introduction of new and highly significant scientific evidence.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the American College of Radiology (ACR) Web site.

ACR Appropriateness Criteria® Anytime, Anywhere™ (PDA application). Available from the ACR Web site.

Print copies: Available from the American College of Radiology, 1891 Preston White Drive, Reston, VA 20191. Telephone: (703) 648-8900.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- ACR Appropriateness Criteria®. Background and development. Reston (VA): American College of Radiology; 2 p. Electronic copies: Available in Portable Document Format (PDF) from the American College of Radiology (ACR) Web site.

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on May 6, 2001. The information was verified by the guideline developer as of June 29, 2001. This summary was updated by ECRI on September 8, 2004. The updated information was verified by the guideline developer on October 8, 2004. This NGC summary was updated by ECRI on February 7, 2006.

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